



**UNITED STATES DEPARTMENT OF COMMERCE**  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/997,774	12/24/97	CHEN	S 3940/3928

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IM22/0825

EXAMINER

TRAN, H

ART UNIT

PAPER NUMBER

1764

DATE MAILED:

08/25/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

08/997,744

Applicant(s)

Chen et al

Examiner

Hien Tran

Group Art Unit

1764

☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-21 is/are pending in the application.

Of the above, claim(s) 16 and 21 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-15 and 17-20 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☒ Claims 1-21 are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2, 4

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## DETAILED ACTION

### *Election/Restriction*

1. Restriction to one of the following inventions is required under 35 U.S.C. § 121:
  - I. Claims 1-15, 17-20, drawn to a catalytic converter, classified in Class 422, subclass 171.
  - II. Claims 16, 21, drawn to a method of reducing pollutant emission, classified in Class 423, subclass 212.
2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (M.P.E.P. § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process, such as the process of manufacturing a chemical compound.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, recognized divergent subject matter and the search required for Group I is not required for Group II, therefore restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Richard Negin on 08/17/99, a provisional election was made with the preservation of the right of traverse to prosecute the invention of Group I, claims

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1-15, 17-20. Affirmation of this election must be made by applicant in responding to this Office action. Claims 16, 21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

### *Drawings*

6. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### *Specification*

7. The disclosure is objected to because of the following informalities:

On page 3, line 9 --H<sub>2</sub>S-- should be corrected.

On page 15, line 40 "not yet available" should be changed to --08/987,232--.

On page 24, line 14 "material" (both occurrences) should be deleted for consistency (note page 11, line 14 and page 15, line 29). See lines 19, 20, 23, 24, 29, 30 and the remaining specification likewise.

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Appropriate correction is required.

8. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

9. Claims 1-15 and 17-20 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear as to what structural limitation applicants are attempting to recite, it is unclear as to what is intended by "material"; in line 5 "low" is a relative term and therefore is vague and indefinite; in line 12 it is unclear as to the position of the hydrocarbon adsorbent with respect to other element of the system.

In claim 2, line 3 it is unclear as to how the refractory carrier is related to the refractory support material set forth in claim 1, line 7. See claims 8-13, 18-19 likewise.

In claim 3 it is unclear as to what applicants are attempting to recite, i.e. whether applicants claim the catalyst converter or the combination of the catalytic converter and the muffler. Also the muffler and the floor have no clear antecedent basis. See claim 8 likewise.

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In claim 4 it is unclear as to what applicants are attempting to recite, i.e. whether applicants claim the catalyst converter or the combination of the catalytic converter and the tailpipe. Also the tailpipe and the floor have no clear antecedent basis.

In claim 5, line 3 it is unclear as to how titania related to the refractory support material set forth in claim 1, line 7 (see claims 18-19/5 likewise); in lines 3-6 it is unclear as to what structural limitation applicants are attempting to recite; in line 7 "T(50)" has no clear antecedent basis and it is unclear as to where it is disclosed in the specification; in line 11 "it" is vague and indefinite.

In claim 8, it is unclear as to how the muffler plates are related to the refractory carrier and the refractory material set forth in claim 1. See claim 14 likewise.

In claim 10, lines 2 and 5 "honeycomb-type" is vague and indefinite. It is suggested that "-type" should be deleted (see claim 18 likewise); in line 5 "the cell walls" lacks positive antecedent basis. See claims 11-13 likewise.

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-2, 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 747,581.

EP 747,581 discloses a catalytic reactor system comprising:

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a catalyst comprising a platinum group metal component dispersed on a refractory support carrier;

a hydrocarbon adsorbent deposited on a refractory carrier.

The gas temperature at the inlet to the monolith is between 40 and 300 °C (page 3, line 59).

With respect to claims 2, 10-11, EP 747,587 discloses that the catalyst and adsorbent are disposed in separated layers or same layers deposited on the cell walls of a honeycomb configuration (page 2, lines 55-59; page 3, lines 18-22).

Instant claims 1-2, 10-11 structurally read on the apparatus of EP 747,581.

12. Claims 1-2, 10-11, (17-19)/1 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 96/39244.

WO 96/39244 discloses a catalytic reactor system comprising:

a catalyst comprising a platinum group metal component dispersed on a refractory support carrier;

a hydrocarbon adsorbent deposited on a refractory carrier (page 6, lines 10-22).

The gas temperature at the inlet to the monolith is between 150 and 200 °C.

With respect to claims 2, 10-11, (18-19)/17/1, WO 96/39244 discloses that the catalyst and adsorbent are disposed in separated layers or same layers deposited on the cell walls of a honeycomb configuration (page 6, lines 19-22, page 7, lines 8-12).

With respect to claim 17/1, WO 96/39244 discloses the specific amount of platinum group metal of 70 g/ft<sup>3</sup> (page 9, line 20).

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Instant claims 1-2, 10-11, (17-19)/1 structurally read on the apparatus of WO 96/39244.

13. Claims 1-2, 10-11, (17-19)/1 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/00119.

WO 97/00119 discloses a catalytic reactor system comprising:

a catalyst comprising a platinum group metal component dispersed on a refractory support carrier;

a hydrocarbon adsorbent deposited on a refractory carrier (page 6, lines 10-22).

The gas temperature is between 200-400 °C (page 30, line 5).

With respect to claims 2, 10-11, (18-19)/17/1, WO 97/00119 discloses that the catalyst and adsorbent are disposed in separated layers or same layers deposited on the cell walls of a honeycomb configuration (page 19, lines 2-10).

With respect to claim 17/1, WO 97/00119 discloses the specific amount of platinum group metal of 1-200 g/ft<sup>3</sup> (page 12, lines 10-11, page 14, lines 4-7).

Instant claims 1-2, 10-11, (17-19)/1 structurally read on the apparatus of WO 97/00119.

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary



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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

16. The art area applicable to the instant invention is that of catalyst and adsorbent.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

17. Claims 1-2, 6, 10-11, (17-19)/1 are rejected under 35 U.S.C. § 103 as being unpatentable over EP 602,963.

EP 602,963 discloses a catalytic reactor system comprising:

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a catalyst comprising a platinum group metal component dispersed on a refractory support carrier;

a hydrocarbon adsorbent deposited on a refractory carrier.

EP 602,963  
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EP 602,931 discloses that although the catalyst is preferably placed near the engine exhaust port, it may be placed at any other positions in the exhaust gas pipe (page 6, lines 28-29).

It would have been obvious to one having ordinary skill in the art to select an appropriate location for the catalyst based on the teaching of EP 602,931<sup>63</sup> since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.  
12/21/99

With respect to claims 2, 10-11, (18-19)/17/1, EP 602,963 discloses that the catalyst and adsorbent are disposed in separated layers or same layers deposited on the cell walls of a honeycomb configuration (page 4, lines 18-39, page 5, lines 2-3).

With respect to claim 6, EP 602,963 discloses an additional upstream catalyst (page 6, line 8, Fig. 2).

With respect to claim 17/1, EP 602,963 discloses the specific amount of platinum group metal of 20-130 g/ft<sup>3</sup> (page 5, line 32).

18. Claims 3-4, 8-9, 12-15, (17-19)/(3-4) are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119, EP 602,963, or WO 96/39244 in view of Urata (5,218,817) and Giarrizzo (3,675,398).

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The apparatus of either WO 97/00119, EP 602,963 or WO 96/39244 is substantially the same as that instantly claimed, but is silent as to whether the catalyst may be placed in the tail pipe or the muffler.

However, Urata and Giarrizzo show the conventionality of positioning the catalyst in the muffler and tail pipe.

It would have been obvious to one having ordinary skill in the art to select an appropriate location for the catalyst, such as at the muffler and tail pipe as taught by Urata and Giarrizzo in the apparatus of either WO 97/00119, EP 602,963 or WO 96/39244 to achieve the purification attendant therewith and since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

19. Claims 5, 7, (17-19)/5 are rejected under 35 U.S.C. § 103 as being unpatentable over EP 602,963 in view of Dunne (5,078,979)

The apparatus of either WO 97/00119, EP 602,963 or WO 96/39244 is substantially the same as that instantly claimed, but is silent as to the specific properties of the adsorbent as claimed.

However, Dunne shows the conventionality of providing an adsorbent having specific properties as claimed.

It would have been obvious to one having ordinary skill in the art to select an appropriate adsorbent, as taught by Dunne in the apparatus of EP 602,963, if not inherent therein, to achieve the desired benefits of adsorbing HC since it has been held to be within the general skill of a worker in

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the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

20. Claims 5, (17-19)/5 are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 or WO 96/39244 in view of Dunne (5,078,979).

The same comment with respect to Dunne apply.

21. Claim 6 is rejected under 35 U.S.C. § 103 as being unpatentable over either EP 747,581, WO 97/00119 or WO 96/39244 in view of EP 602,963.

The apparatus of either EP 747,581, WO 97/00119, WO 96/39244 is substantially the same as that instantly claimed, but fails to disclose whether an additional, upstream catalyst may be provided.

However, EP 602,963 show the conventionality of providing an additional, upstream catalyst.

It would have been obvious to one having ordinary skill in the art to provide an additional, upstream catalyst in the apparatus of either EP 747,581, WO 97/00119, WO 96/39244 as taught by EP 602,963 to further purify the exhaust gas thereof.

22. Claim 7 is rejected under 35 U.S.C. § 103 as being unpatentable over either EP 747,581, WO 97/00119 or WO 96/39244 in view of Dunne (5,078,979) as applied to claim 5 above and further in view of EP 602,963.

The same comment with respect to EP 602,963 apply.

23. Claims 3-4, 8-9, 12-15 are rejected under 35 U.S.C. § 103 as being unpatentable over EP 747,581 in view of Urata (5,218,817) and Giarrizzo (3,675,398).

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The same comment with respect to Urata and Giarrizzo apply.

24. Claim 5 is rejected under 35 U.S.C. § 103 as being unpatentable over EP 747,581 in view of Dunne (5,078,979).

The same comment with respect to Dunne apply.

25. Claims (17-20)/1 are rejected under 35 U.S.C. § 103 as being unpatentable over EP 747,581 in view of WO 97/00119 or WO 96/39244 or EP 602,963.

EP 747,581 is silent as to the specific amount of the catalyst material.

It would have been obvious to one having ordinary skill in the art to select an appropriate amount of catalyst material as taught by WO 97/00119 or WO 96/39244 or EP 602,963 in the apparatus of EP 747,581 to achieve the purification attendant therewith, as use of such is conventional in the art and no cause for patentability here.

With respect to claim 20, EP 747,581 discloses that the catalyst has a light off temperature of 92 °C.

26. Claims (17-20)/(3-4) are rejected under 35 U.S.C. § 103 as being unpatentable over EP 747,581 in view of Urata (5,218,817) and Giarrizzo (3,675,398) as applied to claims 3-4 above and further in view of WO 97/00119 or WO 96/39244 or EP 602,963 for the same reasons set forth in paragraph 25 above.

27. Claims (17-20)/5 are rejected under 35 U.S.C. § 103 as being unpatentable over EP 747,581 in view of Dunne (5,078,979) as applied to claim 5 above and further in view of WO 97/00119 or WO 96/39244 or EP 602,963 for the same reasons set forth in paragraph 25 above.

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28. Claim 20/(1) are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 or WO 96/39244 or EP 602,963 in view of over EP 747,581.

WO 97/00119 or WO 96/39244 or EP 602,963 is silent as to the specific light-off temperature of the catalyst.

However, the catalyst of WO 97/00119 or WO 96/39244 or EP 602,963 is the same as that of the instant claim and therefore must have the same properties, i.e. the same light-off temperature.

In any event, EP 747,581 discloses provision of a catalyst having light-off temperature at 92 °C.

It would have been obvious to one having ordinary skill in the art to substitute the catalyst of EP 747,581 for the catalyst of WO 97/00119 or WO 96/39244 or EP 602,963 for the known and expected results of obtaining result in exhaust gas purification in the absence of unexpected results.

29. Claim 20/(3-4) are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 or WO 96/39244 or EP 602,963 in view of Urata (5,218,817) and Giarrizzo (3,675,398) as applied to claims 3-4 above and further in view of over EP 747,581 for the same reasons set forth in paragraph # 28 above.

30. Claim 20/(5) are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 or WO 96/39244 or EP 602,963 in view of Dunne (5,078,979) as applied to claim 5 above and further in view of over EP 747,581 for the same reasons set forth in paragraph # 28 above.

### *Conclusion*

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31. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1764.

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (703) 308-4253. The examiner can normally be reached on Monday-Thursday from 7:00 AM - 6:00 PM.

The fax phone number for this Group is (703) 305-3599 (for Official papers after Final), (703) 305-5408 (for other Official papers) and (703) 305-6357 (for Unofficial papers).

When filing a FAX in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

HT  
August 19, 1999

*Hien Tran*

**HIEN TRAN  
PRIMARY EXAMINER  
GROUP 1700**